FACTORS INFLUENCING ENVIRONMENTAL TECHNOLOGY ADOPTION: A STUDY ON FOOD AND BEVERAGES INDUSTRY IN PENINSULAR MALAYSIA

By

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ABSTRAK

Kajian ini dilaksanakan untuk mengkaji faktor-faktor yang mempengaruhi penggunaan atau pelaksanaan teknologi alam sekitar dalam kalangan syarikat-syarikat makanan dan minuman. Kajian ini mengambil kira empat faktor yang tidak berkaitan peraturan dan undang-undang iaitu ciri-ciri teknologi, jaringan komunikasi, faktor ekonomi dan pencapaian teknologi yang sering dikatakan mempunyai pengaruh terhadap perlaksanaan teknologi ini. Secara khususnya kajian ini bertujuan menentukan samada wujud hubungan antara pembolehubah tak bersandar dengan perlaksanaan teknologi alam sekitar. Kajian ini berbentuk kajiselidik dan proses pengumpulan data dilakukan hanya sekali. Maklumbalas daripada 76 syarikat makanan dan minuman telah diperolehi dan dianalisa. Hipotesis-hipotesis kajian ini diuji menggunakan analisis korelasi dan statistik multivariate. Hasil analisis mengesahkan bahawa terdapat hubungan-hubungan yang signifikan diantara keempat-empat faktor dengan perlaksanaan teknologi alam sekitar. Dengan itu, keputusan-keputusan kajian ini diharap akan dapat memberi manfaat kepada para penyelidik dan juga pihak industri dalam perlaksanaan teknologi alam sekitar.

ABSTRACT

This study is undertaken to examine the factors that affect environmental technology adoption amongst food and beverage companies in Peninsular Malaysia. It covers four non regulatory factors which include characteristics of the environmental technology, communication networks, economic factors and technology performance that were argued to have significant effect on environmental technology adoption. The specific objective of this study is to determine the existence of relationships between the independent variables and the environmental technology adoption. This study is based on survey design and the time horizon was cross-sectional. Responses from 76 food and beverage companies were obtained and analyzed. The hypotheses were tested using correlation and multivariate statistical analyses. The results of analysis confirmed the hypotheses that there were significant relationships between the four factors and environmental technology adoption. Thus, the results of this study will be beneficial for researchers as well as industrial practitioners in the implementation of environmental technology.

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TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURES

LIST OF ABBREVIATIONS

DOE	Department of Environmental
MOSTI	Ministry of Science, Technology and Environment
SIRIM	Standard and Industrial Research Institute of Malaysia
ISO	International Organization for Standardization
DANCE	Danish Co-operation for Environmental and Development
EPA	Environmental Protection Agency
ISIC	International Standard Industrial Classification
SMEs	Small and Medium Enterprises
EMS	Environmental Management System
MIDA	Malaysian Industrial Development Authority
FMM	Federation of Malaysian Manufacturers
SMIDEC	Small and Medium Industries Development Corporation
MATRADE	Malaysia External Trade Development Corporation
UNIDO	United Nations Industrial Development Organization
SS	Suspended Solid
BOD	Biochemical Oxygen Demand
VOC	Volatile Organic Compound
PM_{10}	Particulate Matters
O_3	Ozone
UNEP	United Nations Environment Program
VIF	Variance Inflation Factor
FOG	Fat, Oil and Grease

GLOSSARY

ENVIRONMENTAL TECHNOLOGY: Those techniques, products and processes that conserve or restore environmental qualities.

CLEANER PRODUCTION: The continuous application of an integrated, preventive environmental strategy applied to processes, products and services to increase overall efficiency and reduce risks to human and environment.

POLLUTANT REMOVAL: The technology used to removed and treat pollutant at the end of the manufacturing processes.

RELATIVE ADVANTAGES: Degree to which an innovation is perceived as being better than the idea it supersedes.

COMPATIBILITY: Degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adopters.

COMPLEXITY: Degree to which an innovation is perceived as relatively difficult to understand and use.

MEMBERSHIP: The network's members and how they related to each other.

CAPACITY: A series of local characteristics and skill considering information, communication technology, organization skill etc

COST: Opportunity for gone in production of goods, valuation in terms of effort, material, resources, time and utilities consumed.

MARKET: The opportunities to buy or sell – extent of demand for merchandise.

ENVIRONMENTAL PERFORMANCE: The results of environmental improvement activities carried out by an organization based on environmental policies, aims, or target.

MANUFACTURING PERFORMANCE: The results of manufacturing activities carried out by firm during used the environmental technology.

CHAPTER 1

INTRODUCTION

This chapter describes a brief background of the research. It describes the problem statement, research questions of the study, objectives of the study, scope and limitations of the study and the significance of the study.

1.1 Background

Environmental destruction is one of the three problem areas in the international discussion on our future challenge (Jischa, 1998). The environment suffers from over population and over consumption of energy and natural resources and also from the technologies with which we maintain in the development of the industries. Although, technology pose great influenced in the modern industrial society, there are technologies that indirectly sacrifice our environment through greenhouse effect, deforestation, ozone holes, mountain of garbage, soil and water pollution.

Weber (2005) stated that there is still a great deal of uncertainty surrounding the debate on the environmental impact of technology in general. The focus is specifically concerning manufacturing, whereby pollution emissions from the manufacturing

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